

NEW OR CRITICAL EUPHORBIACEAE FROM THE AMERICAS

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With one plate

THIS PAPER consists of the descriptions of various new species and varieties, a new genus *Moacroton* from Cuba, and critical notes and records, reductions, and transfers. Unless otherwise stated, the types of the forms herein described are preserved in the herbarium of the Arnold Arboretum.

Phyllanthus Linnaeus

Phyllanthus vichadensis sp. nov.

Fruticulus caules strictos plures erectos e rhizomate perenni edens, ramis glaberrimis exalatis subexalatisve. Foliis ellipticis carnosulis enerviis 5–7 mm. longis, 2 mm. latis, utrinque aequo iure acuminatis petiolulo ca. 1 mm. longo, stipulis subsetaceis integris ca. 2 mm. longis. Floribus secus apicem ramulorum dispositis, ♂ ad 3 capitulatim aggregatis subsessilibus, ♀ longius pedicellatis saepissime singulis. Perianthio ♂ ca. 2 mm. longo 2.5 mm. lato 5-lobo, antheris 3 in columna ca. 1.5 mm. alta coalitis longitudinaliter dehiscentibus, columna basi incrassata revera haud glandulosa. Perianthio ♀ magnitudine fere ♂ 5-lobo, lobis costatis rotundato-ellipticis, disco nullo subnullove, ovario globuloso depresso ca. 1 mm. in anthesi magno, stylis 3 ca. 1 mm. longis e basi liberis subliberisve apice bilobato partitis, pedicello sub fructu nonnihil apice incrassato ad 4 mm. longo.

COLOMBIA: Comisaria El Vichada: About 70 km. southeast of Orocué, Haught 2779.

This new species is described as an inconspicuous perennial of the open llanos. Its habit is reminiscent of *P. diffusus* Kl., an annual weed with which it was originally confused in the herbarium. Fragments of *Leprieur* 319 and *Schomburgk* 529 in our herbarium show that it definitely differs from *P. hyssopifolioides* H. B. K. (well represented by *Williams* 15945a; Venezuela, Amazonas, Puerto Ayacucho) and *P. guianensis* Kl. in foliage as well as in floral characters. It may be remarked that the habit and gross morphology of the latter is reminiscent of the species in the vicinity of *P. caroliniensis* Walt.

Croton Linnaeus

Croton caboensis sp. nov.

Frutex lignosus innovationibus pallide ochraceis velutino-hispidis demum glabrat. Foliis pro more ovatis, interdum lanceolatis vel oblongo-ovatis, 5–8 cm. longis, 2–5 cm. latis, olivaceo-brunneis vel brunneis, submembranaceis, subtus laxius stellato-pubescentibus subgriseis, supra pilis subsimplicibus more proprio adpressis setoso-pubescentibus, apice breviter acuminatis, basi rotundatis vel leviter cuneatis, margine subintegris ciliatis, nervis adscendentibus ca. 7–9-jugis, primo jugo ramoso, glandulis stipulisque

nullis subnullisve, petiolo tomentello gracili, 0.5–2.5 cm. longo. Inflorescentia spicata brevi ad 4 cm. longa. Floribus ♂ gracilius pedicellatis, pedicello ca. 3 mm. longo, perianthio totidem lato longoque, petalis sepalisque subaequalibus, staminibus ad 15. Floribus ♀ : perianthio ca. 3 mm. longo, totidemque lato, apetalo, lobis 5 fere ad basem liberis, costulatis, caeterum glabratis tenuibusque margine integris, ovario subglobuloso pallide ochraceo hispido ad 3 mm. magno, stylis 3, cruribus fere ad basem partitis, 3.2 mm. totis longis, glandulis 5 discretis, pedicello crasso ca. 1 mm. longo, semine ca. 7 mm. longo, 3–3.5 mm. lato, pallido, valde nitido, testa facie anteriori praesertim obscurissime grosseque rugulosa, caruncula subquadrangula parva, columella fructu delapso ad 7 mm. longa, coccis tomento hispido indutis, epicarpio verruculoso.

MEXICO: Baja California: Todos Santos, Cape Region, *T. S. Brandegees s. n.*, Oct. 4, 1899 (TYPE, Herb. Univ. Calif.); San José del Cabo, *T. S. Brandegees s. n.*, Sept. 11, 1891; Corral Piedras, *Katharine Brandegees s. n.*, Sept. 16, 1893.

My first impulse on examining this peculiar plant was to treat it as a subspecies of *C. fragilis* H. B. K., for it clearly belongs in the affinity of that species. However, a careful study of the group of *C. fragilis* H. B. K. as a whole indicated that if this form be placed under that species it was necessary to merge under this binomial numerous other allied forms that have uncontroversially been named, characterized and accepted as distinct entities. In addition, the apparently substrigose indumentum of the upper surface of the leaf, the large and shiny seeds, and the very hispid indumentum of the young capsules are characters which separate *C. caboensis* Croiz. from all other allies of *C. fragilis* H. B. K. at a glance. Baja California, lastly, is well known as a region of much endemism. *Croton flavescens* Greenm. has a quite different indumentum, and sharp keels on its capsule valves.

Croton culiacanensis sp. nov.

Frutex 1–2 m. altus, innovationibus tenuiter puberulis griseis, citius glabratis. Foliis lanceolato-ovatis vel lanceolatis, 3–7 cm. longis, 1.5–4 cm. latis, subtus griseo-tomentulosus, supra pallide viridibus, apice breviter acuminatis, basi rotundatis vel cuneato-rotundatis, eglandulosus sed laminae ipsius basi more proprio subauriculato-callosa, margine subintegris, venis ca. 5–6-jugis primo jugo laminam dimidiam attingente, petiolo graciliore 1–2.5 cm. longo, stipulis subnullis. Inflorescentia 2-sexuali, spicata, gracili, ad 10 cm. longa. Floribus ♂ : perianthio delicato ca. 2 mm. longo, 3 mm. lato, petalis sepalisque subaequilongis, staminibus ca. 15–20. Floribus ♀ : perianthio vix 2 mm. magno albicante, lobis (fructu ineunte) ca. 3.5 mm. longis 2 mm. latis, margine subreduplicativis subintegris, costatis, petalis nullis, glandulis in disculum connatis latis at haud conspicuis, ovario ca. 2 mm. longo latoque albicante, hispidulo, obvie 3-cocco, stylis 3, quove iteratim partito, ca. 2.5 mm. longo.

MEXICO: Sinaloa: Culiacán, *E. Palmer 1507* (TYPE); Ymala, *E. Palmer 1446*; Culiacán, *Brandegees s. n.*, 1904; Mazatlán, *Eyerdam & Beetle 8660*.

Currently this has been identified as representing *C. Watsonii* Standl., or as *C. Ortegae* Standl. It is close to both in its affinities, but cannot easily be confused with either. *Croton Watsonii* Standl. is endemic to the eastern coast of Mexico, and has much larger ♀ flowers, with a definitely

silvery indumentum; the undersurface of the leaf is silvery lepidote, not puberulous or tomentose. *Croton Ortegae* Standl. which is known from the western coast of Mexico, also has much larger ♀ perianths, styles cleft but once, smaller ovaries, and, above all, conspicuous tubular glands at the apex of the petiole. In *C. culiacanensis* Croiz. no glands appear, and the base of the blade is somewhat corrugated, and subauriculate in a peculiar manner.

Croton gynopetalus sp. nov.

Frutex, innovationibus griseo-tomentosis tardius glabratis. Foliis ovatis, 2.5–5 cm. longis, 0.5–2.5 cm. latis, utrinque sed subtus magis conferte tomentosis, supra olivaceis subtus cinereis vel cinereo-roseatis apice latius acuminatis basi rotundato-cuneatis vel rotundatis, margine subintegris vel plus minusve grosse dentato-serratis, penninerviis, nervis ca. 5–8-jugis adscendentibus, glandulis subsessilibus patelliformibus ceraceis obviis 2, petiolo 1–1.5 cm. longo, stipulis fere nullis. Inflorescentia spicata ca. 3–5 cm. longa. Floribus ♂ : perianthio in alabastro ca. 2 mm. magno, staminibus, ut videtur, 10–12, pedicello brevissimo. Floribus ♀ : perianthio ca. 3 mm. longo, 2 mm. lato, lobis 5 erectis, postico 1 minore, caeteris subaequalibus obovato-ligulatis, integerrimis, petalis setaceis, ovario ellipsoideo ca. 2 mm. longo tomentello griseo, stylis 3 ad basem partitis ca. 2 mm. longis, disco sat evoluto.

MEXICO: Oaxaca: San Geronimo, *Purpus* 7159 (TYPE, Herb. Chicago Nat. Hist. Museum).

The position of this new species is doubtful. The material now available clearly shows that a complex of more or less closely related forms ranges between Guatemala and Vera Cruz, speciating as follows: (1) by more or less extensive reductions in the size of the lobes of the ♀ perianth which are nearest the axis of the inflorescence, and by an increase in the number of the lobes so reduced; (2) by a tendency in the foliage to become stabilized either as entire or as serrate, the difference between extremes being of specific order, all floral characters left aside; (3) by variations in the size of the ♀ perianth and capsule.

To the complex just mentioned belong: (a) *C. jutiapensis* Croiz., Guatemala; (b) *C. itzaeus* Lund., Yucatán; (c) *C. gynopetalus* Croiz., Oaxaca; (d) *C. ramillatus* Croiz. and its var. *insignilobus* Croiz., Chiapas and Vera Cruz. Of these five entities, two, *C. ramillatus* Croiz. and *C. jutiapensis* Croiz. have plainly anisomalous ♀ perianths, the remaining three showing also some irregularity in the size of the lobes of the ♀ flower, one or more of which tend to be smaller than the rest. This group, consequently, varies in the ♀ perianth in a manner strongly suggesting the modifications taking place in this organ in *C. capitatus* Michx., *C. Palmeri* S. Wats., *C. leucophyllus* Muell.-Arg. of northeastern Mexico and Texas, and in *C. mentiens* (S. Moore) Pax and its allies of Brazil.

Croton gynopetalus Croiz. has foliage intermediate between that of *C. ramillatus* Croiz. and *C. itzaeus* Lund., that is, more or less entire to dentate-serrate. It differs from both in the presence of petals in the ♀ perianth; from the former also in the much larger perianth-lobes, only

one lobe being reduced; and from the latter in the much less pubescent and grayish, more definitely ellipsoid ovary. The position of *C. ramillatus* Croiz. var. *insignilobus* Croiz. is still doubtful as between *C. ramillatus* Croiz. and *C. gynopetalus* Croiz., and will remain so until the full significance of the petals in the ♀ flower of single known collection of the latter is ascertained.

Croton ramillatus sp. nov.

Fruticulus lignosus, videtur dioecius, plus minusve intricatim ramosus, innovationibus trichomatibus stellatis haud delicatis pallide luteis vel subcinereis vestitis, citius glabratis. Foliis ellipticis vel ovato-lanceolatis, utrinque fere aequo jure attenuatis tomentosisque, supra brunneis vel olivaceis subtus sordide cinereis, margine integerrimis, nervis adscendentibus ca. 5–7-jugis penninerviis, glandulis tubulosis minimis vel saepius subnullis, petiolo sat gracili 3–5 mm. longo. Inflorescentiis exacte spicatis, plerumque 7–10 cm. longis. Floribus ♂ : staminibus ca. 10 in perianthio ca. 2 mm. longo latoque, pedicello vix 1.5–2 mm. longo. Floribus ♀ : perianthio habitu erecto, more proprio anisolobo, scilicet lobis posticis ca. 4 valde diminutis subsetaceis ad 1 mm. longis, anticis ca. 3 ligulatis rotundatis margine integerrimis ca. 2 mm. longis, disco valde adpresso subnullo, ovario rotundato pallide hispidulo ca. 1.5 mm. longo latoque stylis 3, quove ad basem partito ca. 2 mm. longo, capsula sub fructu glabrata, coccis subtrigonis vel potius lineato-carinatis.

MEXICO: Vera Cruz: Barranca de Panoya, *Purpus* 8450 (TYPE, Herb. Chicago Nat. Hist. Museum); Zacuapan, *Purpus* 2114, 2415; Mata Zarza, *Purpus* 9324. Three ♂ collections, all from Vera Cruz, *Purpus* 14045, 14145, 16369, may also belong here.

This new species has been confused with *C. rhamnifolius* H. B. K. and *C. sphaerocarpus* H. B. K. (*C. morifolius* Willd. sensu Muell.-Arg.), which it hardly resembles at all. In its vegetative characters it strongly suggests *C. Sutup* Lund., but the erect ♀ flower with uneven lobes up to 8 in number, and the simple cleft styles set it apart from that species in a decisive manner.

Croton ramillatus var. *insignilobus* var. nov.

A var. *typico* lobis perianthii ad 5, anticis majoribus, postici minus diminutis, capsula — ut videtur — paullo majore discedit.

MEXICO: Chiapas: East of Monserrate, *Purpus* 10066 (Herb. Univ. Calif.).

This variety is discussed under *C. gynopetalus* Croizat.

Croton Shreveanus sp. nov.

Frutex ca. 2-metralis, innovationibus apice hispido-lanulosis citius glabratis. Foliis griseo-viridibus longe ovatis vel elliptico-ovatis, 5–12 cm. longis, 2.5–6.5 cm. latis, stipellis anticis 2–4 (neque glandulis more generis veris) ad costae originem positis, limbo apice sat breviter acuminato, basi rotundato vel subcordato, margine tenuissime glanduloso-serrato, primum tomenti copia griseo vel griseo-olivaceo, citius utrinque glabrato at margine setuloso, nervis adscendentibus ca. 6-jugis, petiolo ca. 1–2 cm. longo, stipulis subnullis, primo tomentoso dein glabrato sed hinc inde semper hispido. Inflorescentiis spicatis ad 13–15 cm. longis. Floribus ♂ : perianthio ca. 3 mm. lato, 2.5–3 mm. longo, petalis sepalisque subaequilongis, staminibus ca. 15, filamentis basi valde lanulosis. Floribus ♀ :

perianthio minuto, vix 1.5–2 mm. lato, 1–1.5 mm. longo, lobis valde acutis triangularibus integris vix accrescentibus, petalis minimis ligulatis, ovario globuloso ca. 1.5 mm. magno, albicante, hispidulo, stylis 3 ca. 5 mm. longis, cruribus ad tertium inferum partitis.

MEXICO: Sinaloa: Capadero, Sierra Tacuichamona, 3000 feet above sea-level, "slender spreading shrub 2 m. high," *Gentry 5580* (Herb. Univ. Calif.; duplicate in Herb. F. Shreve).

This shrubby species belongs in the affinity of *C. adpersus* Benth., which also occurs in western Mexico but ranges southward. It is a very distinct entity, easily recognized by the peculiar stipellae of the limb, reminiscent of the appendages of certain species of *Alchornea* Sw., but very seldom found in *Croton*. It is not *C. Roxanae* Croiz. from Nayarit, Sinaloa and, possibly, Guerrero, which is directly allied with *C. sphaerocarpus* H. B. K., and *C. fragilis* H. B. K.

Croton sancti-lazari sp. nov.

Fruticulus dioecius intricatus, innovationibus tomento stellato hispido pallide citrino vel aurantiaco parcius indutis, serius glabratis. Foliis ellipticis vel sublanceolato-ellipticis 1–2 cm. longis, 0.3–0.9 cm. latis, integerrimis, apice plus minusve late rotundatis, basi rotundato-cuneatis, subtus cinereis vel pallide luteis hispido-tomentosis, supra viridibus tomento stellato disito glabratis, tenellis toto hispido aurantiacis vel fulvescentibus, haud lepidotis, nervis adscendentibus ca. 5–7-jugis, petiolo brevissimo 3 mm. longo vel minore, glandulis nullis, stipulis subcarnosis, triangularibus. Inflorescentiis spicato-capitatis aurantiacis vel lutescentibus, pro more oliganthis. Floribus ♂: perianthio hispido-tomentoso ca. 2 mm. lato, 1.5 mm. longo, lobis triangularibus, petalis glabris subaequilongis, staminibus ca. 10. Floribus ♀: perianthio vix 2 mm. longo latoque, lobis acutis triangularibus, petalis (videtur) nullis, ovario trigono subglobuloso dilute aurantiaco grossius tomentoso ca. 2 mm. longo, 1.5 mm. lato, stylis 3 carnosulis, ca. 2–2.5 mm. longis, quove fere ad basem partito, semine ovato apice sat acuminato ca. 3 mm. longo, 2 mm. lato.

MEXICO: Coahuila: South of Castaños, rocky slopes of El Puerto de San Lazaro, *Wynd & Mueller 155* (TYPE ♂, Herb. Arnold Arb.; ♀ Herb. F. Shreve); Coahuila-Chihuahua boundary: Sierra Almagre, "bushy 1–2 feet tall, on floor of open canyons," *Johnston & Mueller 1141* (Herb. Gray).

A very strong species, related, but not closely, to *C. hypoleucus* Schlecht. and its group. It suggests in certain of its vegetative parts dwarfed states of *C. fruticosus* Torr. The absence of lepidote hairs throughout well separates *C. sancti-lazari* Croiz. from somewhat similar early spring growth forms of *C. neomexicanus* Muell.-Arg., as represented by *M. E. Jones 29177* collected near Laredo, Texas.

Croton lotorius sp. nov.

Frutex ca. 5-pedalis, ligneus perennis, innovationibus laxo cinereo-tomentellis. Foliis griseo-viridibus supra glabratis subtus tenuiter griseo-tomentosis, ovatis, 3–5-plinerviis, 2.5–5 cm. longis, 1.5–3 cm. latis, nervis ca. 6-jugis patentibus vix anastomosatis, margine obtuse dentatis vel duplicato-dentatis crenis glandulosis ad 4 per cm., apice plus minusve acuminatis, basi rotundatis, petiolo gracili 1–2 cm. longo apice glandulis 2 stipitatis ornato, basi stipulis acutis vel setaceis integris fulto. Inflorescen-

tiis gracilibus spicatis 2-sexualibus ca. 10 cm. longis. Floribus ♂ : perianthio ca. 1.5–2 mm. lato, staminibus paucis, pedicello ca. 1 mm. longo. Floribus ♀ : perianthio inter generis minimo vix 1.5–2 mm. longo subcampanulato, pedicello ca. 0.5 mm. longo; calyce hispidulo, fere ad basim partito, lobis integris apice virescentibus, ovario globuloso hispidulo albicante, stylis gracilibus ca. 2 mm. longis partitis. Caetera desunt.

GUATEMALA: Huehuetenango: Between Santa Ana Huista and Rancho Lucas, Sierra de los Cuchumatanes alt. 800–900 m., *Steyermark* 51332.

This plant is used in baths and is locally known as "sanalotodo," a name frequently given to herbs supposed to be panaceas. It suggests *C. trinitatis* Millsp., but that is a strictly herbaceous plant, while *C. litorius* Croiz. is manifestly woody, and differs further in the characters of its indumentum.

Croton pyriticus sp. nov.

Arbor 20-metralis et ultra alta. Innovationibus lepidotis, lepidibus centro brunneis inde indumento velato. Foliis firme chartaceis late ovatis vel triangulari-ovatis 4–9 cm. latis, 4–11 cm. longis, apice abrupte breviterque acuminatis, basi truncatis vel coarctato-cuneatis, margine subintegris repandulisve, adultis supra dissite leproso-lepidotis, subtus copia lepidum brunneo-argenteis vel more proprio subaureis (inde nomen specificum, e pyritis nitore desumptum), nervis utrinque manifestis late adscendentibus ca. 6-jugis, primo jugo majore ramoso, glandulis nullis, petiolo 1.5–6 cm. longo, stipulis nullis. Inflorescentiis apicalibus lateralibusque spicatis ad 10 cm. longis, interdum 1-sexualibus paniculato-ramosis. Floribus ♂ ca. 4 mm. longis, 7 mm. latis, lobis late ovatis petalis subaequilongis, staminibus ca. 15. Floribus ♀ ca. 7 mm. longis, fere totidem latis, perianthio ad basem partito, lobis late ovatis abrupte acuminatis ca. 2.5 mm. latis margine indumento molli sulphureo tectis dorso leproso-lepidotis, petalis obovato-ligulatis ad 2 mm. longis, aequae ac lobis margine indutis, ovario globuloso ca. 2 mm. magno, subargenteo-lepidoto, evoluto sub lente gravi nonnihil verrucoso, stylis pluri-partitis carnosulis ad 4 mm. longis, semine (e *Davidson* 865, in capsula ad specimen tantum solutum) 15 mm. longo, 10 mm. lato, antice ad latera compresso lineolis 3–4 e caruncula ortis obliquis utrinque exarato, rubro-brunneo maculoso-striato, postice nonnihil carinato, cocco (delapso) ad 19 mm. longo, epicarpio dissite verrucoso.

COSTA RICA: Vicinity of El Alto R. R. Station on road to Cartago, alt. 1550 m., *Allen* 661 (TYPE); slope of Cerro Carpintera above La Unión de Tres Ríos, alt. 1350–1500 m., *Dodge & Goerger* s. n.; Alajuela: San Juanillo, alt. 1525 m., *A. Smith* 2756; same locality, alt. 1400 m., "Pacific tropical," *A. Smith* 10008. PANAMÁ: Chiriquí: Boqueli, alt. ca. 1300 m., *Davidson* 865.

In a previous paper, in *Field Mus. Publ. Bot.* 22: 448. 1942, I provisionally referred this to *C. eluterioides* Lotsy. A careful study of all the species of this group so far known from Alabama to Costa Rica, undertaken on the basis of capsules and seeds, has eventually shown that Lotsy's species is not represented.

The forms in this affinity belong to Sect. *Eluteria* Griseb., and are characterized by a more or less densely lepidote foliage, and petaliferous ♀ flowers. Mueller-Arg., Schlechtendal, Baker and other authors have treated this section in a very unsatisfactory manner, which is understandable, considering that with few exceptions the species under it cannot be identified from characters other than those of the capsule and seed.

Croton argyranthemus Michx., extending from Georgia to Texas, suggests Sect. *Eluteria* Griseb. in some respects, and might ultimately prove to be an extreme depauperate form of this group. The species of Sect. *Eluteria* Griseb. which are all woody shrubs or trees, more or less densely lepidote and silvery, their ♀ flower petaliferous, styles usually several times dichotomous, and are natives of the region extending from Alabama to Panamá may be separated as follows:

Seed 11 mm. long, 6 mm. broad, or larger.

Epicarp at maturity densely muricate with subwoody processes; seed 11 mm. long, 7 mm. broad, caruncle apical, conspicuous, testa ungrooved: Eastern Guatemala, Yucatán, Chiapas.....*C. eluterioides* Lotsy.

Epicarp at maturity with scattered subgranular warts; seed 14 mm. long, 9–10 mm. broad, caruncle frontal, inconspicuous, testa with 3–4 shallow grooves radiating downward from the caruncle: Panamá to Costa Rica, possibly northward to southern Guatemala.....*C. pyriticus* Croizat.

Seed not over 10 mm. long, 5 mm. broad.

Pedicle of fruit slender, scarcely or not at all woody, (1.5)–2 to 3.5 cm. long.

Leaves definitely elliptic, penninerved, with 8–14 or more pairs of subparallel very broadly spreading veins; seed 9–10 mm. long, 4–5 mm. broad; epicarp at maturity with few scattered warts: Vera Cruz and Chiapas, Mexico, to Venezuela, Ecuador, and the West Indies generally.....*C. nitens* Sw.

Leaves definitely ovate to lanceolate-ovate, with no more than 6–7 pairs of ascending veins; seed about 7 mm. long, 4–5 mm. broad; epicarp at maturity as in *C. nitens* Sw.; Central and Eastern Guatemala. *C. guatemalensis* Lotsy.

Pedicle of fruit woody to subwoody, almost always stiff, less than 1.5(–2) cm. long.

Leaves elliptic, obtuse to short-acuminate, veins conspicuous, blade underneath markedly silvery to ashen; seed ellipsoid about 6 mm. long, 4.5 mm. broad: Alabama.....*C. alabamensis* A. E. Smith.

Leaves lanceolate to lanceolate-elliptic, seldom ovate-cordate, veins weak or inconspicuous, blade underneath olivish to copper-colored, often glabrescent in age; seed ellipsoid 5–5.5 mm. long, about 4 mm. broad: Tamaulipas to British Honduras and Guatemala.....*C. pseudochina* Schlecht. & Cham.

Leaves ovate to lanceolate-ovate, rounded to subcuneate at base, veins inconspicuous, blade underneath as in *C. pseudochina* Schlecht. & Cham.; seed scaraboid to sublenticular about 6 mm. long, 5–5.5 mm. broad: Chiapas?, Guerrero to Sonora.....*C. reflexifolius* H. B. K.

The specific limits in this group are not all evident in the same degree. Careful field studies and experimental cultivation are needed to elucidate the status of puzzling forms which gravitate around *C. pseudochina* Schlecht. & Cham., and *C. reflexifolius* H. B. K.

Croton flavescens Greenm. var. *Brandegianus* var. nov.

A typo seminibus 4.5–5 mm. longis, neque 7–8 mm. longis recedit.

MEXICO: Sonora: Between Mazatan and Matapé, 4 miles north of Macori, Wiggins & Rollins 391.

Croton flavescens Greenm. in Proc. Amer. Acad. 39: 81. 1903, and its forms constitute a complex, ranging from Michoacán, possibly farther south, to central Sonora. All these forms are more or less closely related to *C. fragilis* H. B. K., and *C. limnocharis* Croiz., but can be distinguished from these two species by the keel of the ovary and mature capsule, which is narrowed and prominent in *C. flavescens* Greenm., rounded off and quite

obscure in the other species. The entire group is most controversial, and should be subjected to experimental cultivation.

Here also belong: *Brandegee s. n.*, Culiacán, Sonora; *Rose, Painter & Rose 9413*, Guerrero, Iguala, and *Ferris & Mexia 5164*, Sinaloa, Labradas. The type-collection of *C. flavescens* Greenm. is *Pringle 8667*, Michoacán: Volcanic hills, Monte León Station, 5000 feet above sea-level.

Croton glandulosus L. var. *septentrionalis* Muell.-Arg. in DC. Prodr. 15(2): 686. 1866; Ferg. in Missouri Bot. Gard. Rept. 12: 51. pl. 17. 1901, *p.p. descr. emend.*

Croton glandulosus L. var. *angustifolius* Muell.-Arg. loc. cit.; Ferg. op. cit. 53. pl. 16. f. 2. *syn. nov.*

Semine ca. 3.25 mm. longo, 2.75–3 mm. lato (inde primo intuitu scaraboideo neque ellipsoideo), caruncula in speciminibus siccis subventrali (i. e., seminis a dorso spectata haud manifesta), arillo in semine maturo saepius brunneo badiove. Foliis saepius (saltem ad ramorum floriferorum radicem) acuminatis.

LECTOTYPUS: Arkansas, Little Rock, *Engelmann 6*, 1835 (in Herb. Missouri Bot. Gard.).

Engelmann 6 is the lone specimen out of the six cited by Mueller-Arg. at publication which perpetuates the epithet *septentrionalis* in connection with the form currently identified as such in the literature. I cannot find the slightest differences by which to separate *Engelmann 6* from *Lindheimer 172*, Ferguson's presumed lectotype of *C. glandulosus* L. var. *angustifolius* Muell.-Arg.

Croton glandulosus L. var. *parviseminus* var. nov.

Semine ca. 3.25 mm. longo, 2.25 mm. lato (inde primo intuitu ellipsoideo neque scaraboideo), caruncula in speciminibus siccis subapicali (i. e., seminis a dorso spectata manifesta), arillo pallido maculis obscurioribus parcius notato.

TEXAS: *Lindheimer 691b* (Herb. Gray).

This variety, which better specimens and experimental cultivation may yet suggest to be better treated as a form, appears to be delicate, sparingly branched and subumbellate in habit. It does not seem to be frequent, for of it I have seen only three specimens, *Reverchon s. n.*, Buzzard Springs, Texas; *Sister Mary Clare s. n.*, Applewhite Rd. 18 miles South of San Antonio, Texas; *Sister Mary Clare 291*, Somerset Rd. 13 miles southwest of San Antonio, Texas. The type-collection was originally included by Mueller-Arg., in DC. Prodr. 15(2): 686. 1866, among the specimens cited as representing *C. glandulosus* L. var. *septentrionalis* Muell.-Arg.

Croton glandulosus L. var. *pubentissimus* var. nov.

Perennans, e loco natali a basi conferte ramosus subdumosus ca. 30 cm. altus, 50–60 cm. latus, cultus laxior at ramorum dispositione idem. Indumento subhispido copioso, foliorum lamina utrinque bene induta, pilis interdum adpressis habitu subsimplicibus. Perianthii lobis sub fructu quam capsula longioribus, semine ovoideo ca. 4 mm. longo, totidemque lato.

TEXAS: Kleberg Country, Padre Island, *Cory s. n.*, 1940.

This is a strong variety, quite unlike *C. glandulosus* L. var. *hirtus* (L'Hér.) Muell.-Arg., which it somewhat suggests in the abundant pubes-

cence. It certainly differs from *C. glandulosus* L. var. *Lindheimeri* Muell.-Arg., which is a more delicate plant, with short indumentum, well represented by the material of *Martindale* and *Parker*, collected at the Philadelphia Navy Yard, and erroneously identified by Ferguson (in Missouri Bot. Gard. Rept. 12: 52. 1901) as *C. glandulosus* L. var. *scordioides* (Lamck.) Muell.-Arg. *Croton glandulosus* L. var. *Simpsonii* Ferg. which may not differ from *C. arenicola* Small, has none of the characters of this new variety.

***Croton yavitensis* sp. nov.**

Arbuscula ad 7 m. alta innovationibus grossius stellato-tomentosis pallide luteis ochraceisve. Foliis fere exacte ellipticis 6–15 cm. longis 2–6 cm. latis apice vix dilatatis sat abrupte acuminatis basi rotundatis subauriculatisque, supra costa puberula excepta glabris subnitidis, subtus pube laxa late stellata parcius pubescentibus, penninerviis ca. 8-jugis, margine remote obscureque dentato-serratis, petiolo ca. 5 cm. longo, stipulis subnullis. Floribus ♂ ignotis. Floribus ♀ sub fructu tantum visis sat mancis: perianthio 1 cm. minore lobis 5 integris triangularibus haud accrescentibus, petalis abortivis nigricantibus vix 1 mm. longis; capsula sub-3-dyma cylindrico-truncata ca. 1.5 mm. magna indumento pallide luteo fere eradiato scabrida, stylis taeniatis iterum partitis involutis, semine ellipsoideo ca. 1 cm. longo 0.8 cm. crasso, brunneo haud nitido, caruncula manifesta antica nempe crinito-fissa.

VENEZUELA: Amazonas: Yavita, *Williams* 14029.

This is a strongly marked species of uncertain affinities.

Moacroton Croizat

Moacroton gen. nov.

Frutices vel arbores humiles e Cuba orientali, foliis coriaceis supra nitidis, subtus lepidibus plus minusve confertis adpressis tectis. Flore ♂: perianthio in serie duplici 3–(5)-mero, petalis sepalis subsimilibus, pro ratione affinitatis valde diminuto: antheris 3–6 subsessilibus, scilicet in apice filamenti brevissimi potius pro glandula salutandi impositis, in anthesi subhorizontalibus, staminodiis nullis. Flore ♀: perianthio 4–(5)-mero laciniis integris erectis vel suberectis, glandulis petalisve nullis: capsula coccorum dorso acutata: stylorum cruribus more proprio abbreviatis, integris vel 3–4-lobulatis: semine fere *Crotonis* L. in affinitate *C. reflexifolii* Kunthiani.

Genus optime a *Crotone* L. discedit: (1) Habitu proprio; (2) Natura androecii a genere Linneano omnino aliena, flore ♂ caeterum minimo; (c) Stylorum fabrica in *Crotone* L. haud obvia. Genus sistit relictum in regione Cubana formis peculiaribus celebrata. In systemate ad *Julocrotonem* Mart. inserendum.

Species typica: *Moacroton Leonis* Croiz.

This new genus keys out as follows:

- A) ♂ flower petaliferous.
 - a) Filaments filiform, at least elongate and cylindric; anthers introrse in anthesis, parallel with the center-line of the flower; stamens always more than 6. *Croton* L.
 - b) Filaments very short, subglandular club-shaped; anthers almost horizontal in anthesis, perpendicular with the center-line of the flower; stamens 3–6. *Moacroton* Croiz.

B) ♂ flower apetalous.

- a') Stamens free.....*Lasiocroton* Griseb.
b') Stamens in a column.....*Leucocroton* Griseb.

This assemblage is remarkable on account of its genera differing mainly, if indeed not wholly, in the characters of the ♂ flower. Its species, however, can be separated only from the characters of the ♀ perianths. Great caution is therefore to be used, lest the ♂ flowers be overlooked as having slight significance.

Moacroton Leonis sp. nov. PL. I, FIGS. 5, 6.

Frutex videtur, innovationibus brunneo-furfuraceis. Foliis primo intuitu supra nitidis, glaberrimis atro-olivaceis valde coriaceis, margine bene revolutis, costa medio supra impressa, subtus prominente, nervis lateralibus nullis. Lamina longe elliptica, interdum vix ad medium parum dilatata, ad 6 cm. longa, 0.7 cm. lata vel minore, indumento supra nullo subtus lepidibus minimis valde sparsis, petiolo sat crasso ca. 0.5 cm. longo, glandulis ad basem limbi ipsissimam 2 pro more lente caute inquirendis, stipulis valde obsoletis. Inflorescentiis mihi adhuc obviis 1-sexualibus spicatis, ad 4–5 cm. longis, more proprio simul cum innovationibus prorumpentibus, quapropter aegre pro apicalibus lateralibusve salutandis, revera exquisite intercalaribus (vide Croizat in Bull. Torrey Club 70: 496–509. 1943), rachide crasso, floribus ♂ distantibus paucis in axilla squamulae valde ciliatae. Flore ♂ minimo quam 2 mm. minore pedicello gracili ca. 3 mm. longo: sepalis 4, petalis 3 subsimilibus pellucido-puncticulatis: androecio 3-mero antheris in apice filamentis clavatis incrassatis brevissimis. Flore ♀ in situ haud viso (adest fructus juvenilis tantum solutus, qui diligenter cum *M. trigonocarpus* (Griseb.) Croiz. comparatus, huic valde similis evadit): capsula 8 mm. longa, laevi, ca. 6 mm. lata, coccorum dorso carinato, hinc inde lepidibus sparsis ornata: stylo more generis brevissimo, vix 1 mm. longo, cruribus apice 1–3-lobulatis.

CUBA: Oriente: Region of Moa, tableland 400 m. high between the Río Cabanas and the Río Moa, growing on limonite, *Marie-Victorin & Clément* 21735 (TYPE); same region, "charrascal" on serpentine at Playa de la Vaca, *Marie-Victorin & Clément* 21774.

It proves impossible under the present conditions to study the types of the species of Urban. However, the descriptions suggest that my new species is neither *M. Ekmanii* (Urb.) Croiz. nor *M. cristalensis* (Urb.) Croiz., which do not have narrowly elliptic leaves rounded or truncate at the tip. Nothing like my new species, likewise is to be found in Carabia's monographic study (Carib. Forest. 3: 114–135. 1942). The specific name honors Hermano León (Dr. Joseph Sylvestre Sauget y Barbier) of the Colegio de la Salle, Vedado, Havana, Cuba.

The inflorescence here described, if constant (which might well be the case), would constitute one more character further to differentiate *Moacroton* Croiz. from *Croton* L.

Moacroton trigonocarpus (Griseb.) comb. nov. PL. I, FIGS. 3, 4.

Croton trigonocarpus Wright ex Griseb. in Nachr. Gesell. Wiss. Gött. 1865, No. 7: 173. March 15th. 1865; Muell.-Arg. in DC. Prodr. 15(2): 576. 1866; Carab. in Carib. Forest. 3: 125. 1942.

Moacroton Ekmanii (Urb.) comb. nov.

Croton Ekmanii Urb. Symb. Antil. 9: 194. 1924; Carab. in Carib. Forest. 3: 125. 1942, non Leonard 1927.

Moacroton cristalensis (Urb.) comb. nov.

Croton cristalensis Urb. Symb. Antil. 9: 197. 1924; Carab. in Carib. Forest. 3: 125. 1942.

Urban appears to have overlooked *Croton trigonocarpus* Griseb., and it is not impossible that *Croton Ekmanii* Urb. and *C. cristalensis* Urb. may prove to be other than forms or varieties of Grisebach's much earlier species. I have seen authentic material of the latter, which patently differs from *M. Leonis* Croiz., but none of Urban's specimens. The transfers to *Moacroton* of all these entities is effected, consequently, as a matter of course, pending a final revision of the entire group.

Argythamnia P. Browne

I see no reason to maintain *Ditaxis* Vahl ex Juss. as a genus distinct from *Argythamnia*. Accordingly, I treat the latter as *Argythamnia* P. Browne subg. *Ditaxis* (Vahl ex Juss.) comb. nov.

Argythamnia coatepensis (Brand.) comb. nov.

Croton coatepensis Brand. in Zoe 5: 249. 1908.

The holotype, *Purpus* 2827 (in herb. Univ. Calif.) has a ♂ flower with the technical characters of *Argythamnia*, that is, the staminal column is single-whorled with no more than 5 stamens. In all other characters it is very difficult to separate this plant from the numerous polymorphic states of *Argythamnia guatemalensis* Muell.-Arg. (*A. tinctoria* Millsp. in Field Mus. Bot. 1: 303. 1896, syn. nov.) which ranges from Central America to eastern and western Mexico and Venezuela (*Potter* 5145, Guanta, roadside on the outskirts of the city, Herb. Gray).

Argythamnia micrandra sp. nov.

Fruticulus vix pedalis, radice videtur annua, pilis malpighiaceis sat longis ad caules indutus, parce ramosus. Foliis ellipticis vel obovato-ellipticis 2–3.5 cm. longis, 1–2 cm. latis apice breviter acuminatis basi longe cuneatis, ultra medium dentato-serratis subtrinerviis, aequae ac caulibus indutis, petiolo ca. 1 cm. longo, stipulis lanceolatis ad 3–4 mm. longis. Perianthio ♂ vix 2 mm. lato, sepalis 4, petalis setaceis minimis, columna staminali 9-andra vix 1 mm. alta. Perianthio ♀ ad 5–6 mm. sub fructu vix maturo lato, sepalis petalisque 5, petalis glandulosis minimis subnullisve, ovario in anthesi vix 0.75 mm. magno pilis erectis longe hispido, stylis minutis bipartitis.

MEXICO: Guerrero: Coyuca, Cutzamala, *Hinton* 6307 (Herb. Gray).

A very distinct, apparently weedy species. The 2-whorled minute staminal column, with about 9 stamens, is the technical character that places this entity under *Argythamnia* subg. *Ditaxis* (Vahl ex Juss.) Croiz.

Alchornea Swartz

Alchornea orinocensis sp. nov.

Arbuscula ad 10 m. alta, innovationibus rachidibusque parcius puberulis glabratisve. Foliis penninerviis basi antice optime stipellatis, elliptico-ovatis

6–21 cm. longis 4–11 cm. latis apice breviter acuminatis basi rotundato-cuneatis, margine dentato-serratis serraturis apice incurvis glandulosisque ad 3 per cm., nervis ca. 7-jugis, trabeculis evidentibus, glandulis maculosis secus costam in axillis nervorum positis, petiolo sat gracili ca. 10 cm. longo, stipulis subnullis. Floribus ignotis. Fructu capsulari epicarpio tenui sublaevi vix granuloso, coccis delapsis ad 8 mm. longis, columella ca. 5 mm. longa, semine fere exacte ellipsoideo ad 6 mm. longo, 4.5 mm. crasso subcylindrico, ad chalazam fere truncato ad micropylem abrupte acuminato, arillo striato-rimoso brunneo subnitido.

VENEZUELA: Amazonas: Alto Orinoco, Tamatama, *Williams 15833* (TYPE); same locality, *Williams 15087*.

The strictly penninerved leaves, and the well-marked stipellae at the anterior face of the blade near the insertion of the petiole, as well as the cicatricose glands along the midrib are characteristic.

Gitara Pax & Hoffmann

Gitara panamensis sp. nov.

Frutex vel arbuscula videtur, innovationibus hispidulis, cortice juvenili albicante rimoso, habitu toto rigido. Foliis obovato-lanceolatis 7–15 cm. longis, 2.5–6 cm. latis tenuiter chartaceis, glabrescentibus, penninerviis, trabeatis, nervis latius adscendentibus ca. 8-jugis, basi cuneatis vix vel haud truncatis, margine ad tertium inferum mediumve bene dentato-serratis (dentibus ad 7–8), apice abrupte sat longe caudatis, petiolo hispidulo ca. 0.5 cm. longo, stipulis membranaceo-scariosis basi incrassatis, triangulari-acuminatis, margine integris, adpressis ad 5 mm. longis. Inflorescentiis (videtur) lateralibus spicatis 1–4 cm. longis, mono-dioecis, floribus ♀ apicalibus terminalibusve. Perianthio ♂ simplici delicato ca. 3 mm. lato 2 mm. longo, ca. 5-lobato, staminibus ca. 30, 1.5 mm. longis, connectivo penicillato, staminodiis glandulisve nullis. Perianthio ♀ 6-mero lobis lanceolatis acuminatis integris anthesi peracta ca. 4–5 mm. lato, ovario maturescente ca. 5–6 mm. lato hispido, stylis 3 basi in columnam coalitis ca. 5–10 mm. longis subplumosis, glandulis nullis.

PANAMÁ: Hills between Pinogana and Yavisa, *Pittier 6543*, 1914.

Gitara Pax & Hoffm. is a segregate from *Tragia* L., which latter consists of a multitude of forms as yet scarcely understood. Its technical characters strongly suggest *Angostylis* Benth., to judge from the descriptions and illustrations I have so far seen, but it is otherwise easily mistaken for *Argythamnia* P. Browne, having been originally identified, distributed as representing the latter genus. I retain *Gitara* Pax & Hoffm. as a genus for the present.

Gitara venezolana Pax & Hoffm. has ecaudate leaves much narrowed at the tip, with truncate bases, the venation appearing as if markedly 3-nerved. In these characters, and, possibly, the smaller ♀ flower, Pax & Hoffmann's species does not agree with mine.

Cunuria Baillon

Cunuria (?) *casiquiarensis* sp. nov.

Arbor ad 6 m. alta. Foliis firme coriaceis ellipticis 11–18 cm. longis, 7–10 cm. latis apice obtuse rotundatis, basi rotundato-cuneatis, margine inte-

gris, in sicco atrobrunneis, supra glaberrimis haud nitidis, subtus sparse minuteque puberulis, ad basem in lamina obscure cicatricoso-glandulosis, nervis patentibus ca. 10-jugis, petiolo validiusculo canaliculato 2–3 cm. longo stipulis subnullis. Inflorescentia ♂ ignota. Inflorescentia ♀ axillari rigida at 7–8 cm. longa indumento adpresso rufido tomentella. Perianthio ♀ 4–5-lobis, lobis vix 0.75 mm. longis triangularibus, petalis glandulisque nullis, pedicello sub fructu indurato, ad 1.5 cm. longo, ovario ovoideo ca. 1.5 mm. longo latoque trigono-costato pubescente, stylis sessilibus simplicibus 3 vix 0.5 mm. longis patentibus, columella coccis delapsis gracili ca. 5 mm. longa, apice abrupte incrassata.

VENEZUELA: Amazonas: Alto Casiquiare, Capihuara, *Williams 15690*.

The genera in this assemblage are ill defined, and it is difficult to make identifications unless one has complete material. *Cunuria* is suggested by the intangibles of habit, and the characters of the foliage, but the inflorescence is somewhat unconventional, when compared with that of *C. Spruceana* Baill., the standard-species. *Conceveiba* Kl. and *Conceveibastrum* (Muell.-Arg.) Pax & Hoffm. appear to be ruled out of consideration by their foliage, and the manifest glands at the base of the ♀ perianth.

Sebastiania Sprengel

Sebastiania pusilla sp. nov.

Fruticulus glaberrimus parte epigea, ut videtur, vix ultra palmari, ramis emortuis persistentibus intricato-ramosus. Foliis statu juvenili tantum visis carnosulis penninerviis pro more obovatis ca. 1 cm. longis totidemque latis margine incrassatis sat obscure denticulato-serratis omnino exaristatis, nervis 3–4-jugis, limbo toto eglanduloso apice obtuse acuminato vel retuso-truncato basi longius cuneato petiolo glanduloso canaliculato apice saepius laeviter papilloso ca. 1 cm. longo, stipulis papillosis triangulari-lanceolatis ad 0.5 cm. longis. Inflorescentiis terminalibus, basi flores 1–2 ♀ gerentibus nec ultra 2–2.5 cm. longis simplicibus spicatisque. Flore ♂ vix 1.25 mm. longo latoque in axilla squamulae basi glandulis 2 baculiformibus ornatae singulo: perianthio subintegro cupulari, staminibus subsessilibus 3. Flore ♀ vix 1.5 mm. longo, totidemque lato: perianthii lobis 3 late ovatis margine erosulis, glandulis obovoideis simplicibus subsimplicibusve cum lobis alternis, ovario in carinis corniculato, stylo fere ad basem 3-partito, cruribus vix papillosis simplicibus recurvis, semine ca. 1.75 mm. longo, 1.5 mm. lato, carunculato, pallide ochraceo-brunneo laevissime reticulato.

URUGUAY: Paysandú, Chapicuy, banks of the Río Uruguay, Sta. Sofia, *Rosengurt B-4169*.

This is a remarkable species agreeing with none of the sections in the genus, and certain to become the type of a new one in the future. The persistent large petaloid appendages of the ♀ flower, the corniculate ovary, the subsessile stamens borne in a subentire perianth are characteristic.

Sapium P. Browne

Sapium contortum sp. nov.

Arbuscula ad 60 cm. alta contorta, ramulis nigricantibus glaberrimis. Foliis subchartaceis ellipticis vel ovato-ellipticis, 3–8 cm. longis 1–3 cm. latis, basi latius rotundatis, apice abrupte acuminatis, margine obscure

serrato-denticulatis hinc inde glandulis majoribus auctis, nervis latius adscendentibus ca. 8–12-jugis, petiolo gracili ca. 1 cm. longo, glandulis petiolaribus plus minusve elongatis retroflexis, stipulis rotundatis margine profunde scariosis alabastra vegetativa apice inflexo tegentibus ca. 2 mm. longis latisque. Inflorescentiis ♂ tantum visis apicalibus ad 8 cm. longis, floribus glomerulatis 7–13, glomerulis basi glandulis elongatis 2–3 fultis, perianthio generis, vix 1.5–2 mm. longo.

VENEZUELA: Amazonas: Puerto Ayacucho, *Williams 15891*.

This species thrives on exposed rocky ledges, and is unusually low-growing for the genus. It might prove to be a local form of *S. Aubletianum* (Muell.-Arg.) Huber, the leaf of which, according to Huber's figure (in Bull. Herb. Boiss., sér. 2, 6: 363. f. 23. 1906) is also obscurely serrate and bears scattered large glands. However, the foliage of *S. Aubletianum* (Muell.-Arg.) Hub. should in no case be shorter than 10 cm., and the character of the leaf margin in this group is not primarily a specific one. I have no material at present representing *Sapium guaricense* Pitt., *S. naiguatense* Pitt., and *S. paucistamineum* Pitt., but find nothing in the descriptions to indicate that they may be dangerously close to my new species. To judge from fragments of *Spruce 511*, originally determined in the Paris herbarium as representing *S. prunifolium* Kl., it seems probable that Klotzsch's species is the same as *S. Aubletianum* (Muell.-Arg.) Huber.

Euphorbia Linnaeus

Euphorbia zerioides Boiss. in DC. Prodr. 15(2): 58. 1862.

Euphorbia chiapensis Brandeg. in Univ. Calif. Publ. Bot. 6: 54. 1914. syn. nov.

As revealed by a comparison of *Purpus 6895*: Chiapas, Sierra de Tonala, and *Galeotti 3741*, the two species are absolutely synonymous.

Euphorbia segoviensis Boiss. in DC. Prodr. 15(2): 58. 1862.

Euphorbia Sloanei L. C. Wheel. in Cact. Succ. Jour. 11: 44. fig. 1939. syn. nov.

No difference exists between *Andrieux 105* and *Palmer 139* which may be said to be of significance, the two specimens being distinguished only by details of the pubescence, and the length of the petaloid appendages.

Euphorbia radians Benth. Pl. Hartweg. 8. 1839; Boiss. in DC. Prodr. 15(2): 74. 1862.

Euphorbia Stormiae Croiz. in Rev. Sudamer. Bot. 6: 13. 1939. syn. nov.

The differences that separate Bentham's species from my own are seemingly of little account. This species is treated by Boissier, op. cit. 71, 74, under Sect. *Poinsettia*, and by Wheeler, in Amer. Midl. Nat. 30: 482. 1943, under Subg. *Poinsettia*. A glance at material representing *E. lancifolia* Schlecht. and its allies might suggest that *E. radians* Benth. probably falls, on the contrary, under Boissier's Sect. *Dichilium*, that is, under Wheeler's Subg. *Agaloma*.

Chamaesyce S. F. Gray emend. Croizat

Chamaesyce arequipensis sp. nov.

Multiceps humilis erecta tota patule hispida, internodiis 1–2 cm. longis vel ultra. Foliis carnosulis ovatis vel rotundato-ovatis 1–1.5 cm. longis, 1 cm. latis sub lente subeveniis 3-nervis, margine subintegris apice tantum

obscure lateque dentatis, petiolo 1–2 mm. longo, stipulis obscuris. Cyathiis in axillis solitariis, pedicello ad 4 mm. longo fultis late campanulatis ca. 2 mm. longis 1.3 mm. latis glandulis subhippocrepicis 4 conspicue appendiculatis appendice albicante inciso-dentata, laciniis ca. 3–4, ovario elongato-trigono hispidulo albicante, stylorum cruribus 3 fere ad medium partitis, basi in columnam brevissime coalitis, stigmatibus capitato-globosis; seminibus, videtur, ellipsoideis acuminatis, albicantibus, testa videtur sublaevi.

PERU: Arequipa: Prov. Camana, 4 km. from Caraveli on the road to Atico, alt. 1800–1900 m., *Metcalf* 30341. (U. S. Natl. Herb.).

The habit of this new species is reminiscent of that of *C. oranensis* Croiz. of Argentina, and *C. Barberiana* Croiz. of Paraguay.

Chamaesyce rochaensis sp. nov.

Annua vel pèrennans repens tota pilis albidis intricatis sat grosse lanulosa caulibus prostratis crassitie fili emporetici minoris vel gracilioribus internodiis 1–2.5 cm. longis, stipulis interpetiolaribus profunde partito-fissis. Foliis bene anisomeris ellipticis rotundatisve emaculatis cum petiolulo vix 1–2 mm. longo ad 1 cm. longis vel brevioribus margine (apice rotundato praesertim) sub lente grossius serratis fabrica haud coriacea. Cyathiis subsolitariis ob internodia abbreviata sub apices sat congestis campanulatis vix 1 mm. longis pedicello ca. 1–1.25 mm. longo, glandulis appendice petaloidea minima praeditis, capsula rotundato-trigona tota lanulosa ad 2 mm. longa lataque, semine carinato-ellipsoideo maturo pallide brunneo haud acuminato sublaevi, scilicet rugis subnullis lente acri caute inquirendis, ad 1.3 mm. longo, 0.65 mm. lato.

URUGUAY: Rocha, Fortaleza Sta. Theresa, "rara in uliginosis," *Rosengurtt* B-2645 (TYPE); same locality, *Lombardo* 2488.

This is one of the forms commonly placed in the herbarium under *Euphorbia thymifolia*. It differs, however, from Indian material, such as *Metz* (*Hoehnacker*) 67, cited by Boissier in DC. Prodr. 15(2): 47. 1852, in its much larger capsules, its more robust habit, heavier pubescence and larger cyathia. It is not the same as *C. oranensis* Croiz. and *C. portu-casadiana* Croiz., both of which are stouter plants with a different pubescence and other floral characters.

Chamaesyce lutulenta sp. nov.

Annua vel perennans radice recta subsimplici descendente quam parte epigea ut videtur majore insignis, cauliculis fili crassitie vel subgracilioribus ad 3–5, vix 2–4-ies partitis, totis, ut visis, nec ultra 5 cm. longis indumento lanoso albicante hispidulis. Foliis sat laxe lanosis suborbicularibus anisomeris ca. 0.5–0.7 cm. longis totidemque latis parte supera praesertim sub lente grosse denticulato-serratis emaculosis, petiolulo vix 1 mm. longo vel minore, stipulis interpetiolaribus late triangularibus denticulato-fissis. Cyathiis subsingulis purpurascensibus glabratis glabrisve arcte campanulatis vix ultra 1 mm. longis, glandulis rotundatis exappendiculatis (interdum margine albicanti-incrassatis), ovario rotundato-trigono glabro vix 1 mm. magno, semine ellipsoideo haud acutato nigricante sublaevi.

URUGUAY: Florida, Est. Timote, Estancia Sta. Clara del Dr. Gallinal, rare in moist localities, *Rosengurtt* B-1654.

This diminutive new species is strongly reminiscent on the whole of the North American *Chamaesyce Fendleri* (Torr. & Gray) Small, but is laxly hispid-lanose and has rounder dentate-serrate leaves.

EXPLANATION OF PLATE I

FIG. 1. *Croton poecilanthus* Urb. Section through ♂ flower in bud, showing position of anthers in vernation characteristic of *Croton* L. FIG. 2. *Croton corylifolius* Lam. Section through ♂ flower at anthesis, showing nature and position of the stamens (only few left) characteristic of *Croton* L. FIG. 3. *Moacroton trigonocarpus* (Griseb.) Croiz., ♀ flower. FIG. 4. *Moacroton trigonocarpus* (Griseb.) Croiz. Styles and stigmas at anthesis seen from above. FIG. 5. *Moacroton Leonis* Croiz., ♂ flower at anthesis seen from above. FIG. 6. *Moacroton Leonis* Croiz. Stamen seen from the side (in slight foreshortening). FIG. 7. *Croton poecilanthus* Urb., ♀ flower; left, a style. FIG. 8. *Croton corylifolius* Lam., ♀ flower; right, a style.

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